The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 45

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte HITOSHI OGAWA, MOTOYASU TSUNODA, AKIRA KOJIMA, EISAKU SAIKI and YUKARI KATAYAMA

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Appeal No. 1999-0264
Application No. 08/573,582

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HEARD: April 26, 2001

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Before HAIRSTON, FLEMING, and DIXON, ***Administrative Patent Judges.***

FLEMING, ***Administrative Patent Judge***.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1, 5, 6, 10, 13, 14, 23, and 27, the only claims

pending in the application.

The invention relates to a disk storage device for recording and reproducing data in accordance with a command given by a higher ranking device (i.e., a host computer). A data transfer control circuit transfers data to and from the higher ranking device (Specification, page 40, lines 16-18). Identification information is provided on the storage medium itself (Specification, page 42, lines 23-26), and/or in a separate memory within the disk storage device (Specification, page 42, lines 2-3), indicating whether data is permitted to be, or is inhibited from, being written into a predetermined area of the storage medium. The disk storage device includes a microprocessor which collates a state of the data write command with identification information for a predetermined sector of the storage medium (Specification, page 42, line 27 to page 43, line 21); and when at least one of the data write command and the identification information indicates data write inhibition when a data write operation is requested by the higher ranking device, the microprocessor informs the higher ranking device of a write inhibition error. A state

display device including a counter displays a data write inhibition error when commanded by the microprocessor (Specification, page 46, lines 15-22). When a data write command and a data write inhibition are both provided by the higher ranking device, data is written into the predetermined sector, and then the predetermined sector is set to data write inhibition.

Claim 1 is reproduced as follows:

1. A disk storage device for recording and reproducing data to and from a storage medium according to a command given by a higher rank device, comprising:

data transfer control means for transferring data from said higher rank device to said storage medium and transferring data from said storage medium to said higher rank device;

identification means having identification information present in the disk storage device for determining whether data is permitted or inhibited to write into a predetermined recording area of said storage medium;

data transfer command means responsive to a data write command together with data write inhibition from the higher rank device for transferring data from the higher rank device to the storage medium, the data being recorded on the storage medium, and identification information indicating the data write inhibition being set in a separate memory in the disk storage device from the storage medium for data management;

wherein said data transfer command means includes a microprocessor in the disk storage device, said microprocessor collates a state of said data write command with said

identification information possessed by the predetermined sector of said storage medium, and when at least one of said data write command and said identification information indicates data write inhibition and a data write operation is requested by the higher rank device, said microprocessor informs said higher rank device of a write inhibition error;

a state display means including a counter connected to said microprocessor, said microprocessor collates whether the predetermined sector of said storage medium indicated by said data write command is already set in said data write inhibition, and when at least one of said data write command and said identification information indicates data write inhibition, said counter on the disk storage device displays a data write inhibition error of said predetermined sector in response to an order given by said microprocessor; and

wherein when a data write command comes together with a data write inhibition from the higher rank device, the predetermined sector of the storage medium is decided whether or not the sector is permitted to write data by said identification means, the data is written into the predetermined sector when the predetermined sector is a data write permission, and the predetermined sector is set to a data write inhibition.

The Examiner relies on the following references:

Purvis	4,549,295	Oct. 22, 1985
Kobayashi et al. (Kobayashi)	4,760,566	Jul. 26, 1988
Director	Re 33,328	Sep. 11, 1990
Saldanha et al. (Saldanha)	5,265,230	Nov. 23, 1993
Ottesen et al. (Ottesen)	5,369,533	Nov. 29, 1994 (filed Dec. 30, 1992)
Nakajima et al. (Nakajima)	5,525,902	Jun. 11, 1996

(filed Oct. 5, 1994)

Claim 1, 6, 10, 13, 14, 23, and 27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nakajima, Saldanha, Kobayashi, Director, and Purvis. Claim 5 stands rejected under 35 U.S.C. § 103 as being unpatentable over Nakajima, Saldanha, Kobayashi, Director, Purvis, and Ottesen.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for the details thereof.

OPINION

We will not sustain the rejection of claims 1, 5, 6, 10, 13, 14, 23, and 27 under 35 U.S.C. § 103.

It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found
in the prior art, or by implications contained in such teachings or suggestions. ***In re Sernaker***, 702 F.2d 989, 995,

217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), ***cert. denied,*** 117 S.Ct. 80 (1996) ***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984).

On pages 8-18 of the Brief, Appellants argue that Nakajima, being directed to a magnetic tape storage device, solves a different problem than Appellants' invention, and that Nakajima teaches "identification means" that cannot be changed during use. Appellants further argue that Saldanha does not teach a separate memory for storing identification information, that neither Nakajima nor Saldanha teaches a microprocessor in the disk storage device, and that Saldanha teaches a more complicated approach because of his desire to be interchangeable with both a WORM medium and a magneto-optical medium. Appellants dispute the Examiner's expressed

motivation for combining Nakajima and Saldanha with Kobayashi, to "write data more efficiently," questioning any efficiency gain from the Kobayashi system and alleging that the motivation is unrelated to the feature for which the Examiner relies on Kobayashi (a microprocessor). Finally, Appellants contest the Examiner's conclusion that one of ordinary skill in the art would have been motivated to combine the references to come up with the instant invention.

In the Answer, the Examiner asserts that Nakajima remains applicable to the instant invention, because numerous references teach interchangeability between disk and tape drives. The Examiner further asserts that Kobayashi does indeed teach more efficient writing of data, because Kobayashi ensures that the intended data is written into a valid location.

As pointed out by our reviewing court, we must first determine the scope of the claim. "[T]he name of the game is the

claim." ***In re Hiniker Co.***, 150 F.3d 1362, 1369, 47 USPQ2d

1523, 1529 (Fed. Cir. 1998).

Appellants' claim 1 recites a disk storage device for recording and reproducing data to and from a storage medium according to a command given by a higher rank device, comprising data transfer control means (between the higher rank device and the storage medium); identification means having information present in the disk storage device for determining write permission or inhibition for a predetermined recording area of the storage medium; data transfer command means responsive to a data write command together with data write inhibition from the higher rank device; identification information indicating write inhibition being set in a separate memory within the data storage device; a microprocessor that collates the state of the data write command with identification information for a predetermined sector, and which informs the higher rank device of a write inhibition error when appropriate; a state display means that displays a data write inhibition error when so instructed by the microprocessor; and when a data write command and data write inhibition are both sent by the higher rank device, the microprocessor determines whether the predetermined sector is

write-permitted, and if so, data is written to the predetermined

sector followed by setting of the predetermined sector to data write inhibition.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." ***Para-Ordnance***, 73 F.3d at 1087, 37 USPQ2d at 1239, ***citing W. L. Gore & Assocs.***, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13.

Upon a careful review of Nakajima, Saldanha, Kobayashi, Director, and Purvis, we fail to find any persuasive suggestion or reason to combine the references in the manner suggested by the Examiner, in order to achieve the claimed

invention.

We agree with the Examiner that Nakajima teaches a magnetic tape storage apparatus including data transfer control means, and identification means for determining whether data is permitted or inhibited to write into a predetermined recording area of the storage medium. Specifically, Nakajima teaches a "System Area" on the tape medium (column 5, lines 13-22), containing information relevant to whether data should be written to certain parts of the tape (i.e., whether that portion of the tape is functioning properly to hold information). The data contained in the "System Area" are read into the "Data" portion of memory 5 when the tape is loaded into the drive unit, and corresponding data are written from memory 5 back to the tape when it is unloaded (column 5, lines 18-37). Nakajima does not teach a disk storage device, nor a microprocessor contained within a data storage device to determine whether an area of a disk is write inhibited and report back to the host computer if a write inhibition error occurs.

We further agree with the Examiner that Saldanha teaches a disk storage device, including identification information

stored on the disk to indicate write permission or inhibition (column 3, line 66 to column 4, line 24). Like Nakajima, Saldanha does not teach a microprocessor as part of the disk storage device, interposed between a host computer and the storage medium.

We further agree with the Examiner that Kobayashi teaches a microprocessor that informs a higher rank device of a write inhibition error (column 8, lines 25-62). The microprocessor of Kobayashi determines whether the recording mode specified by the higher rank device is "update write" or "initial write." If initial write is requested and information has previously been recorded in the data field, the microprocessor does not write the data, and informs the higher rank device that the data field has been written to.

We disagree with the Examiner that the person having ordinary skill in the art would have been motivated to combine Nakajima, Saldanha, Kobayashi, (Director, and Purvis) to achieve the claimed invention. The Examiner cites column 4, lines 63-68 of Saldanha as motivation for the combination. Here, Saldanha suggests the advantage of "distinguish[ing] between erased and written sectors on standard MO media," a

capability that is "useful in a system that performs erased sector management where sectors are pre-erased during times of low user activity, thus enabling better write transfer rates." We presume that the better write transfer rates contemplated by Saldanha result from the fact that overwriting MO media takes more time than initial writes to MO media. This disadvantage is not shared by tape drives, such as disclosed in Nakajima, or hard disk drives, such as the instant invention; thus, the person having ordinary skill in the art would not have been led by Saldanha's expressed improvement in write transfer rates to make the proposed combination. The Examiner cites (column 3, lines 7-9) of Kobayashi as further motivation to make the proposed combination: Kobayashi discloses here "a write operation control method capable of writing information efficiently in a rotating type recording medium." Assuming *arguendo* that Kobayashi's use of a microprocessor to interrogate whether an incoming write instruction is an initial write or an update write, and to inhibit data recording when an initial write is requested in a data field that has previously been written, promotes the

efficient writing of information on a "rotating type recording medium" such as a hard disk, the Examiner has not provided evidence that would have suggested to the person having ordinary skill in the art the desirability of modifying Nakajima's tape drive system to include the microprocessor taught by Kobayashi within the drive. Kobayashi does not teach a system that fully inhibits writing to a given sector of the drive: Kobayashi teaches that "when information having been recorded in the initially specified block is determined to be useless, the high-ranking apparatus can again issue a write instruction in such a manner that the high-ranking apparatus specifies the initially specified block once more but now specifying the update write mode" (column 9, lines 1-7). The microprocessor of Kobayashi thus does not inhibit writing, but acts only to require the "proper" mode from the higher rank device before permitting writing to the desired sector.

Director and Purvis are relied upon for indicating when a protected device is selected, and for a device monitoring errors from a microprocessor, respectively, and do not supply the motivation missing from Nakajima, Saldanha, and Kobayashi,

supra. Ottesen is relied upon to teach switching to permit manual mode or continuous mode for the purpose of optimizing recording density, and also does not supply the needed motivation to make the claimed combination. Because we find that the evidence submitted by the Examiner would not have motivated the person having ordinary skill in the art to make the claimed combination, we will not sustain the rejection of claim 1, and the remaining claims which all depend therefrom, under 35 U.S.C. § 103.

In view of the foregoing, the decision of the Examiner rejecting claims 1, 5, 6, 10, 13, 14, 23, and 27 under 35

U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)
MICHAEL R. FLEMING Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
JOSEPH L. DIXON Administrative Patent Judge	)

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